


```

<dbl>
## 1    68 White Married      T1      N1      IIA      Poorly... 3      Region...
4
## 2    50 White Married      T2      N2     IIIA     Modera... 2      Region...
35
## 3    58 White Divorced     T3      N3     IIIC     Modera... 2      Region...
63
## 4    58 White Married      T1      N1      IIA      Poorly... 3      Region...
18
## 5    47 White Married      T2      N1      IIB      Poorly... 3      Region...
41
## 6    51 White Single       T1      N1      IIA      Modera... 2      Region...
20
## # ... with 6 more variables: `Estrogen Status` <chr>,
## #   `Progesterone Status` <chr>, `Regional Node Examined` <dbl>,
## #   `Reginol Node Positive` <dbl>, `Survival Months` <dbl>, Status <chr>,
and
## #   abbreviated variable names 1`Marital Status`, 2`T Stage`, 3`N Stage`,
## #   4`6th Stage`, 5`differentiate`, 6`A Stage`, 7`Tumor Size`

library('EnvStats')

##
## Attaching package: 'EnvStats'

## The following objects are masked from 'package:stats':
##
##   predict, predict.lm

## The following object is masked from 'package:base':
##
##   print.default

x<-Breast_Cancer$`Tumor Size`
x

##      [1]      4  35  63  18  41  20   8  30 103  32  13  59  35  15  35  19  46
24
##     [19]  25  29  30  40  29  70  20  22  50  17  25  21  40  15  15  20  30
10
##     [37]  27  18  35  23  70  17  21  23   5  51   9  15  32   5  23  55 120
77
##     [55]   2  11  25  18  15  12  18  17  26  75  13  15  70  15  15  17 130
34
##     [73]  30  10  22  55  25  50  50  15  30  20  22  15  15  40 120  80  17
3
##     [91]  60  14  26  25  12  25  30  25  24  27  70  16  45  27  23  25  40
20
##    [109]  21  36  14  51  50  45  51  19  76  20  35  27  35  35  50  38  15
17
##   [127]  25  19  15  18  11  45  12  20  45  18  25  21  49  70   7  19  17

```

38																		
##	[145]	34	30	4	72	18	25	9	21	20	15	18	100	17	7	24	43	30
7																		
##	[163]	18	12	25	62	20	70	37	13	40	70	12	9	10	55	18	15	25
50																		
##	[181]	10	30	13	40	100	25	68	25	23	15	22	7	16	24	75	11	35
60																		
##	[199]	30	25	25	25	12	25	17	11	32	21	25	19	75	52	9	17	35
85																		
##	[217]	50	51	18	75	72	35	12	23	16	16	57	50	17	32	21	11	40
15																		
##	[235]	17	14	60	55	120	11	39	23	28	37	40	9	8	28	15	17	50
48																		
##	[253]	30	68	110	23	12	13	40	30	9	22	30	12	10	25	16	65	22
17																		
##	[271]	60	22	35	18	34	6	105	100	20	57	10	17	25	21	45	50	35
38																		
##	[289]	16	140	25	18	18	34	65	13	20	29	10	62	50	29	15	15	42
130																		
##	[307]	21	51	30	35	31	14	15	60	20	22	80	15	100	30	8	15	80
30																		
##	[325]	25	24	35	12	45	25	35	28	17	15	32	15	60	90	11	37	21
2																		
##	[343]	70	8	22	40	13	32	5	18	52	31	14	7	12	21	20	26	16
15																		
##	[361]	25	20	80	30	16	20	17	100	41	16	25	108	12	38	24	45	98
25																		
##	[379]	30	90	27	47	30	25	17	22	18	18	25	27	25	70	65	22	45
20																		
##	[397]	65	17	15	15	19	90	10	40	31	30	26	25	11	22	59	23	25
18																		
##	[415]	15	30	25	27	25	24	24	20	10	7	42	54	75	15	22	20	65
61																		
##	[433]	27	16	35	55	17	8	25	10	26	120	7	18	30	70	20	80	30
45																		
##	[451]	25	6	21	11	18	40	20	12	16	10	20	20	25	17	22	20	20
30																		
##	[469]	13	15	36	8	10	35	70	35	74	16	70	21	100	70	12	80	25
19																		
##	[487]	25	16	60	15	20	9	16	60	15	12	17	25	18	15	45	70	10
9																		
##	[505]	12	15	18	12	16	15	30	20	21	10	35	22	33	60	13	21	13
39																		
##	[523]	29	35	18	100	130	21	26	50	8	16	16	15	28	23	1	23	21
19																		
##	[541]	87	33	15	13	15	25	60	30	18	20	55	60	11	11	40	16	55
36																		
##	[559]	16	25	30	19	30	55	80	50	14	10	30	60	24	32	42	35	26
30																		
##	[577]	31	11	26	18	43	20	35	13	14	81	10	10	20	30	22	20	28

80																		
##	[595]	37	35	12	19	20	22	14	32	80	21	25	21	15	28	18	27	30
25																		
##	[613]	35	12	30	29	70	21	60	25	20	22	12	48	31	27	18	1	40
26																		
##	[631]	80	20	27	20	30	25	22	63	10	10	40	10	40	20	30	6	22
22																		
##	[649]	15	40	45	13	25	11	58	30	23	9	32	35	15	15	21	51	15
60																		
##	[667]	20	51	25	30	11	40	5	35	38	30	25	25	27	25	18	40	40
15																		
##	[685]	20	23	34	16	18	50	45	100	18	23	25	32	30	30	30	18	24
70																		
##	[703]	28	20	35	117	10	70	35	11	27	12	26	76	32	18	23	10	18
23																		
##	[721]	25	32	18	17	52	27	7	70	26	55	20	15	20	20	61	8	15
12																		
##	[739]	40	25	140	12	21	23	20	17	65	80	19	12	11	40	26	30	50
44																		
##	[757]	21	35	22	55	17	1	23	25	14	25	35	20	25	90	13	12	45
15																		
##	[775]	35	17	24	55	16	20	18	32	30	30	19	24	18	25	19	30	32
16																		
##	[793]	2	30	27	10	10	18	30	22	40	65	13	6	40	19	20	45	31
30																		
##	[811]	14	35	10	25	40	45	21	28	4	25	15	61	22	27	19	25	8
23																		
##	[829]	80	7	15	13	30	50	31	30	15	15	50	25	30	60	21	51	18
25																		
##	[847]	50	8	40	16	18	13	35	12	50	29	20	7	21	20	22	31	45
25																		
##	[865]	35	15	22	15	16	26	35	30	23	18	123	16	11	75	60	20	15
27																		
##	[883]	9	60	7	19	15	40	19	130	30	70	24	110	133	22	55	95	25
13																		
##	[901]	12	17	10	70	30	20	107	40	30	90	16	47	30	7	30	20	60
30																		
##	[919]	14	20	27	40	92	7	20	22	8	50	22	14	30	50	15	25	18
35																		
##	[937]	13	100	105	20	15	30	12	50	20	7	42	19	27	14	17	15	13
12																		
##	[955]	26	20	17	20	24	30	16	18	30	52	60	21	33	6	25	15	14
105																		
##	[973]	35	57	20	20	28	60	25	12	69	55	60	20	13	100	2	20	38
24																		
##	[991]	25	15	25	51	35	25	45	21	19	40	9	22	38	50	30	23	21
140																		
##	[1009]	60	17	55	17	29	40	17	30	32	40	15	35	32	21	25	33	22
15																		
##	[1027]	32	6	30	14	10	12	15	21	20	20	15	54	21	22	22	17	25

22																		
##	[1045]	45	11	17	17	40	5	13	19	19	35	16	15	23	15	19	18	16
21																		
##	[1063]	32	13	16	40	50	35	16	35	36	35	55	25	22	17	55	10	23
25																		
##	[1081]	5	16	55	24	21	13	22	14	30	18	16	56	31	14	15	82	16
16																		
##	[1099]	16	16	50	25	18	25	18	30	65	1	25	20	30	30	18	16	50
52																		
##	[1117]	37	25	40	50	15	25	80	13	25	40	15	19	65	18	15	16	23
21																		
##	[1135]	10	20	40	31	15	11	55	15	37	42	22	48	15	7	40	12	12
65																		
##	[1153]	15	16	22	35	25	20	18	85	25	100	15	18	14	23	40	17	21
22																		
##	[1171]	31	11	19	35	9	21	6	20	60	38	9	11	30	22	25	13	30
25																		
##	[1189]	25	48	6	14	7	90	25	15	120	14	15	35	30	16	9	23	17
43																		
##	[1207]	19	21	17	45	18	43	61	27	15	25	31	50	30	38	5	11	35
7																		
##	[1225]	14	120	14	33	19	19	15	18	47	13	25	28	16	31	4	31	30
55																		
##	[1243]	30	14	17	21	70	30	15	40	8	7	40	35	16	30	18	30	15
12																		
##	[1261]	40	57	60	38	55	24	20	40	38	70	18	25	74	60	60	23	45
21																		
##	[1279]	14	13	20	21	25	22	8	25	25	70	11	80	16	18	15	26	20
18																		
##	[1297]	18	14	42	58	18	25	9	19	11	15	21	52	40	11	20	33	14
28																		
##	[1315]	20	19	100	9	25	15	60	76	16	20	45	35	18	20	26	35	40
30																		
##	[1333]	12	19	28	28	22	8	32	45	55	9	23	20	35	23	80	15	9
30																		
##	[1351]	20	66	22	16	14	80	25	10	22	12	19	17	25	9	9	33	37
24																		
##	[1369]	18	75	25	10	36	26	14	82	30	12	22	16	16	40	20	28	21
24																		
##	[1387]	55	31	24	37	30	20	14	20	27	12	80	23	14	10	22	15	27
20																		
##	[1405]	31	14	40	25	35	20	42	25	50	20	13	6	16	60	23	15	14
9																		
##	[1423]	16	42	40	25	25	37	23	30	12	35	47	28	63	8	35	60	30
22																		
##	[1441]	13	42	45	25	10	35	37	35	40	17	12	15	30	60	19	27	10
12																		
##	[1459]	70	44	45	17	80	16	24	8	51	70	60	45	1	27	35	72	45
20																		
##	[1477]	30	30	13	120	15	61	15	30	18	28	8	22	40	15	20	15	23

20																		
##	[1495]	17	21	52	30	22	19	18	47	15	15	21	40	17	14	23	68	25
50																		
##	[1513]	140	28	7	23	7	10	15	11	12	28	80	25	28	15	30	15	22
28																		
##	[1531]	16	95	27	56	50	21	21	40	18	55	90	28	55	21	9	35	13
55																		
##	[1549]	51	34	5	60	45	38	48	35	32	25	60	12	19	40	50	55	28
18																		
##	[1567]	21	37	11	20	30	15	55	17	17	25	22	35	20	20	39	33	18
40																		
##	[1585]	24	35	40	11	26	18	15	25	21	18	55	15	18	20	15	20	70
13																		
##	[1603]	55	55	24	50	30	10	18	18	45	15	16	45	18	60	24	35	15
21																		
##	[1621]	25	15	11	100	52	24	14	55	45	25	25	32	41	40	32	12	7
30																		
##	[1639]	22	30	17	21	15	22	15	9	49	57	20	27	30	30	5	22	55
45																		
##	[1657]	25	25	5	55	15	15	24	10	14	25	10	20	80	20	15	10	40
15																		
##	[1675]	17	11	15	17	19	26	22	8	120	24	23	90	61	17	40	1	34
10																		
##	[1693]	27	30	50	25	63	17	18	20	45	25	70	3	26	32	60	18	70
35																		
##	[1711]	8	65	70	45	35	28	75	20	15	15	18	30	10	15	35	35	13
15																		
##	[1729]	19	25	23	47	17	14	47	8	12	38	16	90	17	70	18	21	32
30																		
##	[1747]	50	14	19	11	18	19	20	28	15	65	19	15	23	16	30	60	15
22																		
##	[1765]	30	18	20	45	17	20	21	25	6	14	20	15	17	10	25	30	8
18																		
##	[1783]	18	21	15	78	20	18	18	52	20	25	12	15	6	18	35	21	60
97																		
##	[1801]	45	35	13	17	14	25	17	21	35	8	13	38	88	18	40	20	7
27																		
##	[1819]	60	28	38	45	21	42	19	60	43	6	40	50	14	45	20	28	12
20																		
##	[1837]	42	14	2	35	11	5	20	29	24	18	10	30	15	15	60	26	40
40																		
##	[1855]	25	27	22	23	12	30	2	40	30	60	9	70	17	45	51	10	85
30																		
##	[1873]	14	15	10	27	15	35	20	90	10	100	55	35	18	21	15	74	50
70																		
##	[1891]	24	28	15	38	16	35	19	52	10	39	30	8	19	11	22	23	14
25																		
##	[1909]	55	40	35	17	35	15	15	80	40	42	14	26	42	25	70	40	60
25																		
##	[1927]	5	30	45	11	22	25	14	19	20	12	16	60	46	53	6	18	5

25																		
##	[1945]	35	10	60	16	12	31	51	50	25	15	33	80	25	9	27	15	8
70																		
##	[1963]	35	18	20	48	18	35	42	15	15	45	36	40	40	50	15	16	14
10																		
##	[1981]	15	18	24	50	50	20	25	25	25	30	52	62	80	17	36	23	53
10																		
##	[1999]	24	65	15	40	12	20	21	17	56	80	16	30	45	20	20	22	50
16																		
##	[2017]	35	31	29	10	55	8	40	15	70	25	35	69	85	20	18	28	50
12																		
##	[2035]	44	42	17	63	80	90	34	18	35	40	20	110	10	23	20	13	25
36																		
##	[2053]	25	3	3	83	12	14	80	15	15	25	15	15	17	15	21	17	80
45																		
##	[2071]	17	20	34	25	60	25	20	24	30	15	17	16	20	42	25	75	36
12																		
##	[2089]	4	35	34	22	35	30	81	40	30	60	13	15	15	20	40	15	30
25																		
##	[2107]	65	78	14	5	13	15	15	7	14	13	22	14	25	10	11	14	13
10																		
##	[2125]	6	21	40	16	5	18	14	42	32	28	28	60	35	85	12	20	27
36																		
##	[2143]	33	23	13	4	25	80	55	45	11	37	30	18	16	15	42	75	15
35																		
##	[2161]	28	15	24	23	61	75	10	21	12	22	32	28	70	65	16	10	110
25																		
##	[2179]	24	8	25	9	14	40	10	40	10	8	38	18	12	30	23	70	15
36																		
##	[2197]	26	25	25	15	6	14	19	8	17	35	70	15	50	14	21	30	30
20																		
##	[2215]	34	14	25	18	101	20	35	20	16	75	70	29	84	22	90	20	45
22																		
##	[2233]	37	50	22	25	10	40	32	60	100	55	60	11	70	20	55	19	17
90																		
##	[2251]	35	17	35	27	26	23	19	35	50	12	11	15	39	60	11	90	27
14																		
##	[2269]	25	19	50	60	11	90	65	11	30	30	95	50	12	55	28	100	22
20																		
##	[2287]	35	20	4	12	17	20	25	40	25	15	50	30	30	24	75	19	15
55																		
##	[2305]	92	12	14	40	14	35	25	17	60	22	30	12	55	16	60	18	30
15																		
##	[2323]	45	13	40	30	20	20	12	12	11	22	22	12	55	20	4	50	25
130																		
##	[2341]	75	11	33	32	24	35	21	21	25	24	19	22	60	12	16	85	12
60																		
##	[2359]	17	83	20	20	35	50	10	39	18	76	25	9	9	4	33	9	15
23																		
##	[2377]	12	18	70	16	97	35	17	2	20	8	19	15	27	18	25	23	17

11																		
##	[2395]	24	25	20	12	12	35	60	22	30	15	22	23	35	18	30	25	12
18																		
##	[2413]	75	15	24	15	60	45	13	45	21	11	30	29	14	60	68	30	7
16																		
##	[2431]	6	20	10	17	30	1	18	12	16	7	2	21	115	24	15	40	24
29																		
##	[2449]	55	6	20	12	30	30	24	70	30	31	10	15	15	12	40	34	20
30																		
##	[2467]	9	35	13	21	12	51	31	60	25	28	10	30	23	11	100	28	45
10																		
##	[2485]	73	11	30	12	17	38	28	15	17	46	25	25	15	20	15	40	40
25																		
##	[2503]	85	33	16	25	120	60	17	16	30	13	15	18	20	24	56	25	28
45																		
##	[2521]	29	15	45	13	21	45	19	45	27	23	30	40	80	40	15	25	12
20																		
##	[2539]	37	21	17	37	19	8	17	35	40	11	47	21	18	22	20	55	25
11																		
##	[2557]	12	14	42	9	25	35	40	90	20	45	30	35	62	12	8	56	15
29																		
##	[2575]	66	11	50	35	45	65	50	17	38	20	42	60	5	35	24	12	29
7																		
##	[2593]	35	15	85	12	35	22	25	35	80	15	30	39	40	60	32	28	15
25																		
##	[2611]	40	13	74	35	18	25	38	22	20	7	13	15	33	80	6	30	22
34																		
##	[2629]	27	10	60	34	28	13	17	15	20	18	75	26	70	52	14	25	50
17																		
##	[2647]	25	22	18	20	68	5	20	55	15	25	35	15	21	15	35	65	25
65																		
##	[2665]	40	14	12	35	14	75	90	16	120	15	55	35	21	40	19	18	30
21																		
##	[2683]	60	17	77	20	35	12	25	16	10	15	24	34	125	45	57	75	60
20																		
##	[2701]	90	14	4	60	21	27	50	25	17	60	19	50	40	10	30	60	70
52																		
##	[2719]	15	17	13	20	28	15	9	30	11	15	5	20	15	25	23	18	30
25																		
##	[2737]	38	60	37	100	35	18	15	35	85	15	26	35	80	15	25	20	20
32																		
##	[2755]	40	35	25	24	26	104	51	30	35	25	16	16	25	100	60	52	23
16																		
##	[2773]	25	30	17	19	10	18	10	10	12	18	60	45	10	25	22	17	15
30																		
##	[2791]	37	55	65	75	14	11	52	27	49	46	22	40	25	50	50	30	13
21																		
##	[2809]	40	7	25	51	26	20	8	40	10	17	2	63	70	45	21	14	13
13																		
##	[2827]	12	19	20	27	100	16	12	35	4	40	17	32	12	27	8	22	52

9																		
##	[2845]	18	15	13	20	16	16	25	3	32	40	10	35	35	23	47	60	70
50																		
##	[2863]	48	17	25	25	25	63	12	14	12	14	83	28	35	5	14	25	25
12																		
##	[2881]	22	60	80	32	15	63	17	62	16	25	20	11	14	50	18	51	12
7																		
##	[2899]	70	27	19	37	20	25	23	11	80	23	50	90	80	5	20	46	25
15																		
##	[2917]	13	15	70	35	11	16	30	18	25	32	22	40	22	22	45	29	60
60																		
##	[2935]	11	18	18	16	25	75	12	25	60	4	9	25	20	60	42	40	13
14																		
##	[2953]	25	58	30	54	30	20	63	25	3	60	35	15	40	25	65	45	15
24																		
##	[2971]	15	23	30	24	35	5	46	50	38	36	4	25	15	25	30	35	18
23																		
##	[2989]	60	11	21	42	30	37	20	55	78	45	11	15	21	30	36	15	3
25																		
##	[3007]	44	17	57	30	15	80	26	25	80	30	20	13	12	90	45	50	27
30																		
##	[3025]	15	12	60	11	18	10	21	22	28	65	24	33	50	51	5	40	24
25																		
##	[3043]	21	9	10	43	13	10	8	45	14	25	45	18	21	25	20	30	35
44																		
##	[3061]	47	20	55	6	13	12	25	35	50	17	33	20	13	59	42	3	16
60																		
##	[3079]	14	15	34	11	27	35	35	10	22	16	20	26	38	28	14	23	9
20																		
##	[3097]	20	19	60	70	40	60	20	12	25	35	40	15	40	19	100	31	48
37																		
##	[3115]	20	28	26	16	21	25	19	31	22	9	19	50	35	65	22	40	20
25																		
##	[3133]	50	55	30	90	12	35	47	30	17	20	14	20	37	21	24	20	18
15																		
##	[3151]	25	35	15	45	24	15	16	24	11	7	60	27	40	16	9	32	35
17																		
##	[3169]	10	22	35	18	35	15	27	14	15	27	32	25	16	26	20	70	24
21																		
##	[3187]	30	22	11	18	90	16	45	24	30	32	42	24	24	90	40	22	27
16																		
##	[3205]	72	15	40	28	8	12	15	55	16	14	21	18	18	63	48	20	101
28																		
##	[3223]	40	15	11	21	7	35	22	18	34	100	30	18	29	45	18	60	6
30																		
##	[3241]	20	50	17	30	25	48	70	55	13	45	9	25	47	80	25	9	7
80																		
##	[3259]	9	53	30	12	10	20	40	42	17	21	18	35	18	17	30	39	18
45																		
##	[3277]	11	20	50	55	10	13	28	16	27	15	31	94	29	70	14	36	25

27																		
##	[3295]	30	40	40	11	36	50	10	68	35	32	14	13	70	23	19	80	25
15																		
##	[3313]	15	50	24	27	43	15	70	20	28	17	38	35	7	34	40	30	40
25																		
##	[3331]	50	33	52	50	42	38	45	19	17	40	21	13	15	10	12	22	25
3																		
##	[3349]	23	35	10	32	18	17	16	12	39	18	23	25	36	26	17	14	7
10																		
##	[3367]	13	15	22	2	22	70	50	20	84	20	23	41	25	10	13	30	30
35																		
##	[3385]	25	19	35	35	30	21	18	15	74	50	76	17	20	50	30	120	15
24																		
##	[3403]	15	5	25	13	10	21	17	34	22	15	24	28	23	42	30	16	30
50																		
##	[3421]	22	15	15	25	13	25	29	14	14	24	35	23	30	24	52	15	27
30																		
##	[3439]	30	54	12	30	25	21	7	18	40	18	25	31	23	15	25	27	52
21																		
##	[3457]	26	32	15	21	26	14	22	34	30	15	15	30	13	50	28	25	26
7																		
##	[3475]	2	22	59	25	14	43	8	70	28	18	12	20	20	11	17	17	26
12																		
##	[3493]	35	6	22	22	19	50	15	15	72	45	20	90	35	31	10	28	30
86																		
##	[3511]	25	70	30	40	20	40	13	30	40	48	50	21	18	18	58	37	28
18																		
##	[3529]	18	32	22	18	22	39	24	30	25	15	35	10	40	9	40	30	50
20																		
##	[3547]	15	30	17	15	48	62	7	15	95	15	9	25	11	14	14	15	15
25																		
##	[3565]	18	60	15	45	35	40	30	12	13	43	75	100	17	12	75	12	37
54																		
##	[3583]	85	20	46	21	33	33	29	20	65	120	30	16	90	25	32	29	12
32																		
##	[3601]	35	22	40	7	23	30	15	17	15	40	17	15	16	9	25	20	90
10																		
##	[3619]	23	30	82	40	15	30	30	16	19	80	30	50	66	40	45	25	13
37																		
##	[3637]	20	42	35	20	60	60	45	20	19	23	55	23	30	51	22	21	16
53																		
##	[3655]	23	25	18	20	26	65	21	55	7	14	50	10	8	20	40	33	20
26																		
##	[3673]	17	51	30	30	15	18	43	15	15	28	32	32	25	18	19	30	30
25																		
##	[3691]	36	40	26	40	31	15	12	20	32	28	13	47	40	30	23	40	26
100																		
##	[3709]	50	18	13	30	50	33	44	45	30	23	13	18	28	50	11	15	25
27																		
##	[3727]	65	55	40	14	50	30	21	55	120	40	25	55	12	65	34	22	35

```

17
## [3745] 20 70 40 22 14 13 15 23 55 18 75 47 14 38 23 9 12
25
## [3763] 26 5 18 25 30 15 15 25 64 40 20 31 30 120 31 15 24
25
## [3781] 35 7 20 19 45 25 11 15 30 17 37 13 38 25 20 9 33
16
## [3799] 30 27 22 15 11 17 44 54 8 9 25 25 15 25 55 41 15
15
## [3817] 25 25 32 30 14 58 30 12 24 47 18 55 25 53 23 22 12
32
## [3835] 40 60 25 11 65 80 55 16 18 17 18 50 21 50 13 51 25
30
## [3853] 15 40 10 34 70 27 21 15 15 46 4 5 40 19 33 11 34
16
## [3871] 21 80 55 9 21 25 18 41 23 15 13 35 33 11 35 30 25
27
## [3889] 96 40 11 20 50 75 24 32 16 27 15 19 20 35 80 40 18
12
## [3907] 25 19 60 79 95 30 50 22 33 15 11 30 8 25 30 15 30
70
## [3925] 7 80 6 30 21 17 120 27 22 35 6 15 20 11 30 20 30
20
## [3943] 40 30 15 60 17 35 34 35 25 18 8 24 13 30 27 15 27
22
## [3961] 50 22 25 21 12 140 30 60 35 12 12 21 70 20 67 24 62
11
## [3979] 17 32 65 58 52 30 12 20 30 7 37 30 47 90 38 20 2
25
## [3997] 19 19 18 30 45 45 15 19 24 40 35 21 18 100 23 25 80
15
## [4015] 68 40 50 28 10 9 46 22 44 30

var(x)
## [1] 446.0416

```

H0:var_Tumor size=450 H1:var_Tumor Size!=450

```

varTest(x, alternative = "two.sided", sigma.squared = 450, conf.level = 0.95)

## $statistic
## Chi-Squared
## 3987.612
##
## $parameters
## df
## 4023
##
## $p.value
## [1] 0.6978332

```

```
##
## $estimate
## variance
## 446.0416
##
## $null.value
## variance
##      450
##
## $alternative
## [1] "two.sided"
##
## $method
## [1] "Chi-Squared Test on Variance"
##
## $data.name
## [1] "x"
##
## $conf.int
##      LCL      UCL
## 427.1735 466.1942
## attr(,"conf.level")
## [1] 0.95
##
## attr(,"class")
## [1] "htestEnvStats"
```

Conclusion: Here P value is 0.6978332 which is greater than $\alpha=0.05$, so here we accept the null hypothesis.

```
White<-subset(Breast_Cancer,Race=='White')
Black<-subset(Breast_Cancer,Race=='Black')
y<-Breast_Cancer$Race
y

##      [1] "White" "White" "White" "White" "White" "White" "White" "White"
##      [10] "White" "White" "White" "White" "White" "White" "White" "White"
##      [19] "Black" "White" "Other" "White" "White" "White" "White" "White"
##      [28] "White" "White" "White" "White" "White" "White" "White" "Other"
##      [37] "White" "White" "White" "Other" "White" "White" "Other" "Black"
##      [46] "White" "White" "White" "White" "White" "White" "White" "Black"
##      [55] "White" "White" "White" "White" "White" "White" "Other" "White"
```

```
## [64] "White" "White" "White" "White" "White" "White" "Other" "White" "White"
"White"
## [73] "Black" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [82] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [91] "White" "White" "Other" "Other" "White" "White" "White" "White" "White"
"White"
## [100] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [109] "Black" "White" "White" "White" "White" "White" "White" "White" "Black"
"White"
## [118] "White" "White" "Black" "White" "White" "White" "White" "White" "Other"
"White"
## [127] "White" "White" "Other" "Black" "White" "White" "Black" "White" "White"
"White"
## [136] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [145] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [154] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [163] "White" "White" "White" "Other" "White" "White" "White" "White" "White"
"Other"
## [172] "White" "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
## [181] "White" "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
## [190] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [199] "White" "White" "White" "White" "White" "White" "White" "Other" "White"
"Other"
## [208] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
## [217] "White" "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
## [226] "Black" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [235] "White" "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
## [244] "Other" "White" "Black" "White" "White" "White" "White" "Other" "White"
"Other"
## [253] "White" "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
## [262] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
## [271] "White" "White" "White" "Other" "White" "White" "White" "White" "Black"
"White"
## [280] "White" "White" "White" "White" "White" "White" "White" "White" "Black"
"Other"
```

[289] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[298] "Other" "White" "White" "Other" "Other" "White" "White" "White"
"Black"
[307] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[316] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
[325] "White" "White" "White" "White" "Black" "White" "White" "Black"
"White"
[334] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[343] "White" "White" "White" "White" "White" "Other" "White" "White"
"White"
[352] "White" "White" "Other" "White" "White" "White" "White" "White"
"Other"
[361] "White" "White" "White" "White" "White" "White" "Black" "White"
"White"
[370] "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
[379] "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
[388] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[397] "Black" "White" "Other" "Black" "White" "White" "White" "White"
"White"
[406] "White" "Other" "White" "Other" "White" "White" "White" "White"
"White"
[415] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[424] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[433] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[442] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[451] "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
[460] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[469] "White" "White" "Black" "White" "Other" "White" "White" "Other"
"White"
[478] "White" "Other" "Other" "White" "White" "White" "White" "White"
"White"
[487] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[496] "Black" "White" "White" "White" "Black" "White" "White" "White"
"White"
[505] "White" "Other" "White" "White" "White" "White" "White" "White"
"White"

```
## [514] "Black" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [523] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [532] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [541] "Other" "White" "White" "Other" "White" "Other" "White" "White" "White"
"White"
## [550] "White" "White" "White" "White" "White" "White" "White" "Black" "White"
"White"
## [559] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
## [568] "White" "White" "White" "Other" "White" "White" "White" "White" "White"
"Other"
## [577] "White" "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
## [586] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
## [595] "White" "White" "Black" "Other" "White" "White" "Black" "White" "White"
"White"
## [604] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [613] "White" "White" "White" "White" "White" "White" "White" "Black" "White"
"Other"
## [622] "White" "White" "White" "White" "White" "White" "White" "Black" "White"
"Other"
## [631] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
## [640] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [649] "White" "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
## [658] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [667] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [676] "White" "White" "White" "Other" "White" "Other" "White" "White" "White"
"White"
## [685] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [694] "White" "White" "Other" "White" "White" "White" "Other" "White" "White"
"White"
## [703] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [712] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [721] "White" "White" "White" "White" "White" "White" "Black" "White" "White"
"Black"
## [730] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
```

```
## [739] "White" "Black" "White" "White" "Black" "White" "White" "White"
"White"
## [748] "White" "Other" "White" "Other" "White" "White" "White" "White"
"White"
## [757] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [766] "White" "White" "White" "Black" "Other" "White" "White" "White"
"Black"
## [775] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
## [784] "White" "White" "White" "White" "Other" "Other" "White" "White"
"White"
## [793] "White" "White" "White" "Other" "White" "White" "Black" "Black"
"White"
## [802] "White" "White" "White" "White" "Other" "White" "White" "White"
"White"
## [811] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [820] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [829] "White" "White" "White" "White" "Other" "Other" "White" "Other"
"White"
## [838] "White" "White" "White" "Black" "White" "White" "White" "Other"
"White"
## [847] "Other" "Black" "White" "Black" "Black" "White" "White" "White"
"Other"
## [856] "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
## [865] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
## [874] "White" "White" "White" "White" "Black" "Other" "White" "White"
"White"
## [883] "White" "Other" "White" "White" "White" "White" "White" "Other"
"White"
## [892] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [901] "White" "White" "White" "Black" "White" "White" "White" "White"
"Black"
## [910] "Black" "White" "Other" "White" "White" "White" "Black" "White"
"Black"
## [919] "White" "Other" "White" "Other" "White" "White" "Other" "White"
"White"
## [928] "Black" "White" "White" "Black" "White" "Other" "White" "White"
"White"
## [937] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
## [946] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [955] "White" "White" "Black" "Other" "Black" "White" "White" "White"
"Other"
```


[964] "White" "White" "White" "White" "Black" "White" "Black" "White"
"White"
[973] "White" "Other" "White" "White" "White" "White" "White" "White"
"Other"
[982] "White" "Black" "White" "Black" "White" "Black" "White" "White"
"White"
[991] "White" "Other" "White" "White" "White" "Black" "White" "Other"
"Other"
[1000] "White" "White" "White" "White" "White" "White" "Other" "Other"
"White"
[1009] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1018] "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
[1027] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1036] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1045] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1054] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1063] "White" "Other" "White" "White" "White" "White" "White" "Other"
"Black"
[1072] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1081] "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
[1090] "White" "Other" "White" "White" "Black" "White" "Other" "White"
"White"
[1099] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1108] "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
[1117] "White" "White" "White" "White" "Other" "White" "White" "White"
"Other"
[1126] "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
[1135] "Black" "White" "Other" "White" "White" "White" "White" "White"
"White"
[1144] "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
[1153] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1162] "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
[1171] "White" "Black" "White" "White" "White" "White" "Other" "White"
"White"
[1180] "Black" "White" "White" "White" "White" "White" "White" "Other"
"White"

[1189] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
[1198] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
[1207] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
[1216] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"Other"
[1225] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
[1234] "White" "White" "White" "White" "White" "White" "Black" "White" "White"
"Other"
[1243] "White" "White" "White" "White" "White" "Other" "Other" "White" "White"
"White"
[1252] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1261] "White" "Black" "White" "White" "White" "White" "White" "White" "Black"
"Black"
[1270] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
[1279] "White" "White" "Black" "White" "Black" "White" "White" "White" "Black"
"Black"
[1288] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1297] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1306] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"Black"
[1315] "White" "White" "White" "White" "Black" "Black" "White" "White" "White"
"Black"
[1324] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"Black"
[1333] "White" "White" "White" "Other" "White" "Other" "White" "White" "White"
"Black"
[1342] "White" "White" "Other" "White" "White" "Other" "White" "Other" "White"
"White"
[1351] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[1360] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
[1369] "White" "White" "Black" "White" "White" "White" "Other" "Black" "White"
"White"
[1378] "Black" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1387] "White" "Other" "White" "White" "White" "White" "Black" "White" "White"
"White"
[1396] "White" "White" "White" "White" "Other" "White" "Other" "White" "White"
"White"
[1405] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"White"

```
## [1414] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1423] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [1432] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1441] "White" "Black" "Black" "White" "White" "White" "White" "White" "White"
"White"
## [1450] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
## [1459] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1468] "White" "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
## [1477] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1486] "White" "White" "White" "Other" "White" "White" "White" "White" "White"
"White"
## [1495] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"Black"
## [1504] "White" "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1513] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1522] "White" "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
## [1531] "White" "White" "White" "Black" "Black" "White" "White" "White" "White"
"White"
## [1540] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1549] "Black" "Other" "White" "Other" "White" "Other" "White" "White" "White"
"White"
## [1558] "Other" "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
## [1567] "White" "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
## [1576] "White" "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
## [1585] "White" "White" "White" "Black" "White" "Black" "White" "White" "White"
"White"
## [1594] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1603] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [1612] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [1621] "White" "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
## [1630] "Black" "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
```

[1639] "White" "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
[1648] "White" "White" "Black" "White" "White" "Black" "White" "White"
"White"
[1657] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1666] "White" "White" "White" "Other" "White" "White" "White" "Other"
"White"
[1675] "White" "White" "Other" "Black" "White" "White" "White" "White"
"White"
[1684] "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
[1693] "White" "White" "Other" "White" "White" "White" "White" "White"
"White"
[1702] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1711] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1720] "Other" "White" "White" "White" "White" "White" "Other" "White"
"White"
[1729] "White" "White" "White" "Black" "Other" "White" "White" "White"
"White"
[1738] "White" "White" "White" "White" "Other" "White" "White" "White"
"White"
[1747] "White" "White" "White" "Black" "White" "White" "White" "White"
"Black"
[1756] "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
[1765] "Other" "White" "White" "Black" "White" "White" "Black" "White"
"White"
[1774] "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
[1783] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1792] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
[1801] "White" "White" "White" "White" "Black" "White" "White" "White"
"Black"
[1810] "White" "Other" "White" "Black" "Black" "White" "White" "White"
"White"
[1819] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1828] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
[1837] "White" "White" "White" "White" "Other" "White" "White" "Other"
"White"
[1846] "Black" "White" "White" "White" "White" "White" "White" "Other"
"Black"
[1855] "White" "White" "White" "White" "White" "White" "White" "White"
"White"

[1864] "White" "Other" "White" "White" "White" "Black" "Black" "White"
"White"
[1873] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1882] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
[1891] "White" "White" "Other" "White" "White" "Black" "White" "White"
"White"
[1900] "Black" "Black" "White" "White" "White" "White" "White" "Black"
"White"
[1909] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1918] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1927] "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
[1936] "White" "Other" "White" "White" "White" "White" "White" "White"
"Other"
[1945] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1954] "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
[1963] "White" "White" "White" "White" "White" "White" "White" "Black"
"White"
[1972] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1981] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1990] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[1999] "White" "White" "White" "Other" "White" "White" "Other" "White"
"White"
[2008] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
[2017] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
[2026] "White" "Black" "White" "White" "White" "Other" "White" "White"
"White"
[2035] "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[2044] "White" "White" "Other" "White" "White" "White" "White" "White"
"Other"
[2053] "White" "Black" "White" "White" "White" "Other" "White" "White"
"White"
[2062] "White" "White" "White" "White" "White" "Black" "White" "Black"
"White"
[2071] "White" "White" "White" "White" "White" "White" "Black" "White"
"White"
[2080] "Black" "White" "White" "White" "White" "White" "White" "White"
"White"

[2089] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2098] "White" "Black" "Other" "White" "White" "White" "White" "White" "White"
"White"
[2107] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2116] "White" "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
[2125] "White" "Other" "White" "White" "White" "Other" "White" "White" "White"
"White"
[2134] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2143] "White" "White" "White" "White" "White" "Black" "Other" "White" "White"
"White"
[2152] "White" "White" "White" "White" "White" "Other" "White" "White" "White"
"White"
[2161] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2170] "White" "Other" "Other" "Black" "Other" "White" "White" "White" "White"
"White"
[2179] "White" "White" "White" "White" "White" "Other" "White" "Other" "White"
"White"
[2188] "White" "White" "White" "White" "White" "Other" "White" "White" "White"
"White"
[2197] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2206] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2215] "White" "Other" "White" "White" "White" "White" "White" "White" "Other"
"White"
[2224] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[2233] "White" "Other" "Black" "White" "White" "White" "White" "White" "Other"
"White"
[2242] "White" "Black" "White" "Black" "Black" "White" "White" "White" "White"
"White"
[2251] "White" "White" "Black" "White" "White" "Other" "Black" "White" "White"
"White"
[2260] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
[2269] "Other" "White" "White" "White" "White" "White" "White" "White" "Other"
"Black"
[2278] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2287] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
[2296] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2305] "Other" "White" "White" "Black" "White" "Other" "White" "White" "White"
"White"

```
## [2314] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2323] "White" "White" "Black" "White" "Black" "Black" "White" "White"
"White"
## [2332] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2341] "White" "White" "White" "White" "White" "Black" "White" "Other"
"White"
## [2350] "White" "Other" "White" "Black" "White" "White" "White" "White"
"White"
## [2359] "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
## [2368] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2377] "White" "White" "White" "White" "White" "White" "Black" "White"
"White"
## [2386] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2395] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2404] "White" "White" "Other" "Black" "White" "Other" "White" "White"
"White"
## [2413] "White" "White" "Other" "White" "White" "Black" "White" "White"
"White"
## [2422] "White" "White" "Other" "Other" "White" "White" "White" "Black"
"White"
## [2431] "White" "White" "White" "White" "Black" "Black" "White" "White"
"Other"
## [2440] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2449] "White" "Black" "White" "Other" "White" "White" "Other" "White"
"White"
## [2458] "White" "White" "Other" "White" "White" "White" "White" "Black"
"White"
## [2467] "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
## [2476] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
## [2485] "White" "White" "Black" "White" "White" "Other" "White" "Other"
"White"
## [2494] "White" "White" "Other" "White" "White" "White" "White" "Black"
"White"
## [2503] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2512] "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
## [2521] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
## [2530] "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
```

[2539] "White" "Black" "White" "Other" "Black" "White" "Other" "Black"
"White"
[2548] "White" "Black" "White" "White" "White" "Other" "White" "White"
"White"
[2557] "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
[2566] "White" "White" "Other" "White" "Other" "White" "White" "White"
"White"
[2575] "White" "Other" "White" "White" "White" "White" "White" "White"
"Other"
[2584] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2593] "White" "White" "Other" "White" "White" "Other" "White" "White"
"Other"
[2602] "Other" "White" "Black" "White" "Other" "White" "White" "Other"
"White"
[2611] "White" "Black" "White" "White" "White" "White" "White" "Black"
"White"
[2620] "Black" "White" "White" "White" "White" "Black" "White" "White"
"White"
[2629] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
[2638] "White" "White" "White" "Black" "White" "White" "White" "White"
"Black"
[2647] "White" "White" "White" "White" "White" "White" "White" "Black"
"Black"
[2656] "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
[2665] "White" "White" "Black" "White" "White" "White" "Other" "Black"
"White"
[2674] "White" "White" "White" "White" "Other" "White" "White" "White"
"Black"
[2683] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2692] "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[2701] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2710] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2719] "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
[2728] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2737] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2746] "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
[2755] "White" "White" "White" "White" "White" "White" "White" "White"
"White"

[2764] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2773] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2782] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
[2791] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[2800] "White" "White" "Other" "White" "White" "White" "White" "White" "Other"
"Other"
[2809] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2818] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
[2827] "White" "White" "White" "White" "Other" "Black" "White" "White" "Other"
"White"
[2836] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2845] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2854] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"Black"
[2863] "White" "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
[2872] "White" "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
[2881] "White" "White" "White" "Black" "White" "White" "Black" "White" "White"
"White"
[2890] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
[2899] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2908] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2917] "White" "White" "White" "Black" "White" "Other" "White" "White" "White"
"White"
[2926] "White" "White" "Other" "White" "Other" "White" "White" "White" "White"
"White"
[2935] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[2944] "Black" "White" "White" "White" "Other" "White" "White" "White" "White"
"White"
[2953] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
[2962] "Other" "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
[2971] "White" "White" "White" "White" "Black" "White" "Other" "White" "White"
"White"
[2980] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"White"

[2989] "Other" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[2998] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3007] "White" "Black" "White" "Black" "White" "White" "White" "White" "White"
"White"
[3016] "White" "White" "White" "White" "White" "Other" "White" "White"
"White"
[3025] "White" "White" "White" "White" "White" "White" "Other" "White"
"White"
[3034] "White" "Other" "White" "Black" "White" "White" "White" "White" "White"
"White"
[3043] "White" "White" "White" "White" "White" "White" "Black" "White"
"White"
[3052] "Black" "Black" "White" "White" "White" "White" "White" "White"
"White"
[3061] "White" "White" "Other" "White" "White" "White" "Other" "White"
"White"
[3070] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3079] "White" "White" "White" "White" "Black" "White" "White" "White"
"Other"
[3088] "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
[3097] "White" "Black" "White" "White" "White" "White" "Other" "White"
"White"
[3106] "White" "White" "White" "Black" "Black" "Other" "White" "White"
"White"
[3115] "White" "White" "Other" "White" "Other" "White" "White" "White"
"White"
[3124] "White" "Black" "White" "White" "White" "White" "White" "Other"
"White"
[3133] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3142] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3151] "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
[3160] "White" "White" "Black" "White" "White" "White" "White" "White"
"White"
[3169] "White" "White" "Other" "White" "White" "White" "White" "White"
"White"
[3178] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3187] "White" "White" "White" "White" "Black" "White" "White" "White"
"White"
[3196] "White" "Black" "White" "White" "White" "Black" "Other" "Black"
"White"
[3205] "White" "White" "White" "White" "White" "White" "White" "Other"
"White"

```
## [3214] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
## [3223] "White" "Black" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [3232] "White" "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
## [3241] "Other" "White" "White" "White" "White" "White" "Other" "White" "White"
"White"
## [3250] "White" "White" "White" "Other" "White" "White" "White" "White" "White"
"White"
## [3259] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3268] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3277] "White" "White" "White" "Black" "White" "White" "White" "White" "White"
"Other"
## [3286] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3295] "White" "White" "Other" "White" "White" "White" "Other" "White" "White"
"White"
## [3304] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [3313] "Other" "White" "White" "White" "White" "White" "White" "White" "Other"
"White"
## [3322] "White" "Other" "White" "White" "Black" "White" "White" "White" "White"
"White"
## [3331] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3340] "White" "White" "White" "Black" "White" "White" "White" "White" "Other"
"White"
## [3349] "White" "Black" "Other" "White" "White" "White" "White" "White" "White"
"Other"
## [3358] "White" "White" "White" "Black" "White" "White" "Other" "White" "White"
"White"
## [3367] "White" "White" "White" "Other" "Other" "White" "White" "White" "White"
"White"
## [3376] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3385] "White" "White" "Black" "White" "White" "White" "White" "White" "White"
"White"
## [3394] "Other" "White" "Other" "White" "Black" "White" "White" "White" "White"
"White"
## [3403] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3412] "White" "Black" "Black" "White" "White" "White" "White" "White" "White"
"White"
## [3421] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3430] "White" "Other" "White" "Other" "White" "White" "White" "White" "White"
"White"
```

[3439] "White" "White" "White" "Other" "White" "White" "White" "White" "Other"
[3448] "White" "Other" "White" "White" "White" "Other" "White" "White" "Black"
[3457] "Black" "White" "Black" "Other" "White" "White" "White" "White" "White"
[3466] "Other" "White" "White" "White" "White" "White" "White" "White" "White"
[3475] "Black" "White" "White" "White" "White" "Other" "Black" "White" "White"
[3484] "White" "White" "White" "White" "White" "Other" "White" "White" "White"
[3493] "White" "White" "Black" "White" "White" "Black" "White" "White" "White"
[3502] "White" "White" "White" "White" "White" "White" "Other" "White" "White"
[3511] "White" "White" "White" "White" "White" "White" "White" "White" "White"
[3520] "White" "White" "White" "White" "White" "White" "White" "White" "White"
[3529] "White" "White" "White" "White" "White" "White" "White" "White" "Other"
[3538] "White" "White" "White" "White" "White" "White" "White" "White" "White"
[3547] "Other" "Black" "White" "White" "Black" "White" "White" "White" "White"
[3556] "White" "White" "White" "White" "White" "White" "Other" "White" "White"
[3565] "White" "White" "White" "White" "White" "Other" "White" "White" "White"
[3574] "White" "White" "White" "White" "White" "White" "Black" "Black" "Other"
[3583] "White" "White" "White" "White" "White" "White" "White" "Other" "White"
[3592] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
[3601] "White" "White" "White" "White" "White" "Other" "White" "White" "Black"
[3610] "White" "White" "White" "Black" "White" "Other" "White" "White" "White"
[3619] "White" "White" "White" "White" "White" "Black" "White" "White" "White"
[3628] "Other" "Black" "White" "White" "White" "White" "White" "White" "White"
[3637] "White" "White" "White" "White" "White" "White" "White" "Black" "White"
[3646] "White" "White" "White" "White" "Black" "White" "Black" "White" "White"
[3655] "White" "White" "Black" "White" "Other" "White" "White" "Other" "White"

[3664] "White" "White" "Other" "White" "White" "White" "White" "White" "White"
"Other"
[3673] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
[3682] "Black" "White" "White" "White" "White" "Black" "White" "White"
"White"
[3691] "White" "Black" "White" "White" "White" "White" "White" "White" "White"
"Other"
[3700] "White" "White" "White" "White" "White" "White" "White" "White" "White"
"Black"
[3709] "White" "White" "Black" "Black" "Other" "White" "White" "White"
"White"
[3718] "Black" "White" "White" "Black" "Black" "Black" "White" "White"
"Other"
[3727] "White" "White" "White" "White" "White" "Black" "White" "White"
"White"
[3736] "White" "Black" "Other" "White" "White" "White" "Other" "White"
"White"
[3745] "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
[3754] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3763] "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
[3772] "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
[3781] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3790] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3799] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
[3808] "White" "White" "White" "Black" "Other" "White" "Other" "White"
"Other"
[3817] "White" "White" "White" "White" "White" "White" "Other" "Other"
"White"
[3826] "White" "White" "White" "Black" "White" "White" "White" "White"
"White"
[3835] "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
[3844] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3853] "Black" "White" "White" "Other" "White" "White" "Other" "White"
"White"
[3862] "White" "White" "White" "White" "White" "White" "Black" "White"
"White"
[3871] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
[3880] "White" "White" "White" "White" "White" "White" "White" "White"
"White"

```

## [3889] "White" "Black" "Black" "White" "White" "White" "White" "Other"
"White"
## [3898] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3907] "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3916] "White" "White" "White" "White" "White" "Other" "White" "White"
"White"
## [3925] "White" "White" "White" "Other" "White" "White" "Black" "White"
"White"
## [3934] "White" "White" "White" "White" "White" "White" "White" "White"
"Other"
## [3943] "White" "White" "White" "Black" "White" "Other" "White" "Black"
"White"
## [3952] "White" "Black" "White" "Black" "White" "White" "White" "White"
"Other"
## [3961] "Other" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3970] "Black" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3979] "White" "White" "White" "White" "White" "White" "White" "White"
"White"
## [3988] "White" "White" "Other" "White" "White" "Black" "White" "White"
"White"
## [3997] "White" "Other" "White" "White" "White" "White" "White" "White"
"White"
## [4006] "White" "Other" "White" "White" "White" "Black" "White" "White"
"White"
## [4015] "White" "White" "White" "White" "White" "Other" "White" "White"
"Black"
## [4024] "White"

var(White$`Tumor Size`)

## [1] 447.1265

var(Black$`Tumor Size`)

## [1] 491.3952

```

v_1 =tumor size of White(race) v_2 =tumor size of Black(race)

$H_0: v_1 = v_2$ $H_1: v_1 \neq v_2$

```

var.test(White$`Tumor Size`, Black$`Tumor Size`, alternative =
'two.sided', conf.level = 0.95)

##
## F test to compare two variances
##
## data: White$`Tumor Size` and Black$`Tumor Size`
## F = 0.90991, num df = 3412, denom df = 290, p-value = 0.2585

```

```
## alternative hypothesis: true ratio of variances is not equal to 1
## 95 percent confidence interval:
##  0.7630909 1.0717090
## sample estimates:
## ratio of variances
##           0.9099123
```

Conclusion: Here p value is greater than alpha.so we accept the null hypothesis.Therefore tumor size of White(race) is equal to tumor size of Black(race).